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Detailed Section of Chemung Rocks Exposed in the Gulf Brook Gorge at Le Roy, Bradford County, Pennsylvania. By A. T. Lilley, of Le Roy.

(Read before the American Philosophical Society, December 7, 1883.)

	Feet.
1. Cap of Chemung with <i>Atrypas</i> and many unrecognizable forms in light shale. (<i>Spirorbis</i> among them).....	1
2. <i>Productella</i> bed in gray sand.....	10
3. Green shale	15
4. Red shale.....	4
5. Green shale	20
6. <i>Grammysia</i> bed and gray shale	25
7. Iron ore, with <i>Spirifer</i> , <i>Pterinea</i> , <i>Crinoids</i> , <i>Grammysia</i> , and <i>fish remains</i> . (<i>Spirorbis</i> among them)...	4
8. Green shale.....	20
9. Red <i>fucoid</i> bed	8
10. Green sandstone.....	20
11. Red shale and sand with unrecognizable fossils.....	4
12. Conglomerate with pebbles, lime, <i>Spirifer</i> , <i>Productella</i> and <i>fish remains</i>	6
13. Green shale.....	10
14. Pink shale.....	2
15. Green shale	40
16. Green sandstone.....	2
17. Gray sandstone.....	19
18. Gray sandstone.....	1
19. Green shale	52
20. <i>Strophomena</i> bed.....	1
21. Green sandstone.....	14
22. Green shale.....	40
23. Brown sandstone, with <i>Spirifer</i> and <i>Productella</i>	1
24. Gray sandstone, with <i>Crinoids</i> and <i>plants</i>	8
25. Green shale.....	6
26. Green sandstone and shale, with <i>Crinoids</i> and <i>Spirifers</i>	8
27. Gray sandstone and shale.....	60
28. Green sandstone, with <i>shells</i> and <i>fish remains</i>	53
29. Red shale and sandstone.....	14
30. Brown sandstone, with <i>shells</i> and <i>fish remains</i>	39
31. Green shale	6
32. Red sandstone, with <i>iron ore</i> and <i>shells</i>	8
33. Gray shale.....	8
34. <i>Calcareous iron ore</i> and sandstone.....	12
35. Brown shale.....	20
36. <i>Calcareous iron ore</i> (red) and sandstone.....	11

	Feet.
37. Gray sandstone and shale with carbonized <i>plant stems</i> , sulphate of iron and <i>shells</i>	2
38. Brown sandstone, with <i>shells</i>	10
39. Brownish sandstone, with <i>Spirorbis</i> and <i>shells</i>	35
40. <i>Crinoidal limestone</i>	4
41. Bluish shale.....	8
42. <i>Calcareous red sandstone</i>	9
43. Brown sandstone.....	18
44. Green sandstone.....	8
45. <i>Calcareous sandstone</i>	4
46. Green sandstone and shale.....	90
47. <i>Calcareous sandstone</i>	5
48. Light gray sandstone and shale.....	130
49. Gray shale.....	63
50. <i>Conglomerate</i> , with <i>shells</i>	3
51. Green shale.....	12
52. Green sandstone and shale	270
53. <i>Limestone</i> , with <i>shells</i>	2
54. Gray sandstone and shale, with <i>shells</i>	220
55. Gray sandstone, with <i>fucoids</i>	1
56. Green sandstone.....	42
57. Blackish shale, with <i>Lepidodendra</i>	50
58. Green and brown sandstone and shale.....	100
59. Green shale.....	25
60. <i>Upper Ambocælia bed</i> , with <i>Loxonema</i> , <i>Spirifer</i> , <i>Grammysia</i> and <i>Bellerophon</i>	2
61. Unexposed for.....	70
62. <i>Lower Ambocælia bed</i> in green shale of.....	50
63. Unexposed to line of Granville township, Bradford county, Pa.....	50

1855

Mr. Lilley has made extensive collections of fossils from these rocks, some of which have been studied by Prof. Claypole, of the Second Geological Survey. Recently he has added largely to his number of fish from the Chemung and Lower Catskill rocks ; some of the forms seem new.

The Upper Mansfield red beds occasionally contain vast numbers of the plates and scales of fish large and small ; he has one perfect scale that measures more than four inches across.

Mr. Lilley has found *Spirorbis* in Nos. 1, 7 and 39 of the section ; that is, at intervals of 74' and 540' respectively.

He has found a *Holoptychius scale* marked on a rock which contains *tentaculites*, *spirifer*, *ambocælia*, *pterinea*, and numerous minute shells the species of which he cannot recognize, in the Gulf Brook among the débris of the Mansfield red beds. The rock resembles that of one of the Mansfield red beds outcropping in a small gorge a quarter of a mile west of Gulf Brook, and containing also *tentaculites*, an *orthoceras*, *fish bones*, *crinoids*, and concretionary balls about the size of mustard seed.